



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D3391-025
Job Sheet 168762-A



Part No: D3391-025

Job Qty: 1 ea

Part Name: Aft Tube Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/22/17

Job Tracking No:

Due Date: 12/8/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Customer: Falcon Aviation Services (CFALC01)

PO Box 62030 Abu Dhabi, , United Arab Emirates ph:011 971 50 445 0187 fx:+971 2 444 0022.

Note: DWG REV J SHEETS 9,10,11 IPP Rev B 06-02-07 ECN773 dwg rev. D EC IPP Rev:C 06-03-28 Update
Manuf. Instructions JLM IPP rev D 07.03.20 revF dwg EC IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified
by: DD IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC IPP Rev:G 08-09-10 revH as per dwg DD verified
by:EC IPP Rev:H 11.11.14 AS PER REV.I DD verified by:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	12/7/17	12/7/17	0.00	0.00	Start Up Crosstubes		PMP
100	Mori Seiki	1 pcs	12/7/17	12/7/17	2.49	4.17	Mori Seiki TL-40		PMP
110	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC2		PMP
112	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC5		38
120	CNC Vertical Machining	1 pcs	12/7/17	12/7/17	0.00	2.63	HAAS 1		KT 17-12-02
130	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC2		KT 17-12-02
140	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC8		2x 17/12/04
150	Skidtubes	1 pcs	12/7/17	12/7/17	0.00	1.03	Skidtubes		m66
160	CNC Bend Skidtubes	1 pcs	12/7/17	12/7/17	0.00	1.33	CNC Bend Skidtube		m66
170	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC5		BE
180	Skidtubes	1 pcs	12/7/17	12/7/17	0.00	1.03	Skidtubes		m66
190	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC5		2017-12-21
200	HandFinish	1 pcs	12/7/17	12/7/17	0.00	0.58	HandFinish1		2017-12-21
210	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC7		PP2
220	Skidtubes	1 pcs	12/7/17	12/7/17	0.00	1.41	Skidtubes		m66
230	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC5		
235	HandFinish	1 pcs	12/7/17	12/7/17	0.00	0.58	HandFinish2		
240	SprayPaint	1 pcs	12/7/17	12/7/17	0.00	0.25	Spray Paint		
250	QC	1 pcs	12/7/17	12/7/17	0.00	0.00	QC14		
260	HandFinish	1 pcs	12/8/17	12/8/17	0.00	0.58	HandFinish4		
270	QC	1 pcs	12/8/17	12/8/17	0.00	0.00	QC5		
280	Packaging	1 pcs	12/8/17	12/8/17	0.00	0.00	Packaging3		
290	QC21-SA	1 Ea	12/8/17	12/8/17	0.00	0.00	QC21		

Part Op 100 - Turn as per Folio FA599 Rev: AA & Dwg D3391 Rev: 5 ***ensure steady rest is turning true*** REMOVE
Descriptions: STEADY REST AND MACHINIG MARKS****

120 - 1-Machine as per Folio FA 599 Rev: ____ & Dwg D3391 Rev: ____

140 - ***INSPECT INSIDE BORE***

150 - 1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

160 - Form as per Dwg D3391 Using Bend Prog 3391025

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Dart Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K64 1K7 CANADA TEL.: 1 613 632-5200 Email: sales@dartaero.com www.dartaerospace.com S014104 Aft Tube Assembly	D3391 - 025 Start up Operation Mfg Date: 11/27/17 Job No: 168762 - A	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left; padding: 5px;">DISPOSITION</th> <th colspan="4" style="text-align: left; padding: 5px;">AGAINST DEPARTMENT/PROCESS</th> </tr> <tr> <td style="width: 5%; text-align: center;">k</td><td style="width: 15%;">☐</td> <td style="width: 15%;">Skid-tube</td><td style="width: 5%; text-align: center;">☐</td> <td style="width: 15%;">Cross tube</td><td style="width: 5%; text-align: center;">☐</td> <td style="width: 15%;">Water Jet</td><td style="width: 5%; text-align: center;">☐</td> <td style="width: 15%;">Engineering</td><td style="width: 5%; text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">b</td><td>☐</td> <td>Machining</td><td>☐</td> <td>Small Fab</td><td>☐</td> <td>Prod. Eng. Coord.</td><td>☐</td> <td>Quality</td><td>☐</td> </tr> <tr> <td style="text-align: center;">s</td><td>☐</td> <td>Thermoforming</td><td>☐</td> <td>Finishing</td><td>☐</td> <td>Rec/Store/Packaging</td><td>☐</td> <td>Other</td><td>☐</td> </tr> <tr> <td style="text-align: center;">d</td><td>☐</td> <td>Large Fab</td><td>☐</td> <td>Composite</td><td>☐</td> <td>Supplier</td><td>☐</td> <td></td><td></td> </tr> <tr> <td colspan="6" style="padding: 5px;">QTY Effective : _____</td> <td colspan="4" style="padding: 5px;">MRB (QSI042) Approval</td> </tr> <tr> <td colspan="6" style="padding: 5px;">Disposition</td> <td colspan="4" style="padding: 5px;">Completed By</td> </tr> <tr> <td colspan="6" rowspan="2" style="height: 150px;"></td> <td colspan="4" style="padding: 5px;">Lead hand / Supervisor Approval Verification</td> </tr> <tr> <td colspan="4" style="padding: 5px;">QC / QA Coordinator Approval</td> </tr> </table>	DISPOSITION		AGAINST DEPARTMENT/PROCESS				k	☐	Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐	b	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐	s	☐	Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐	d	☐	Large Fab	☐	Composite	☐	Supplier	☐			QTY Effective : _____						MRB (QSI042) Approval				Disposition						Completed By										Lead hand / Supervisor Approval Verification				QC / QA Coordinator Approval			
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180 - 1-Open Aft cap pilot hole to .208" as per Dwg D3391 2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only. 3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig . *****Do Not Open To Finished Size***** 4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes. 5-Open wearplate holes to 0.297" and c'bore as per dwg D3391 6-Open up all float bag holes to 0.328" and c'sink as per Dwg D3391. 8- Scribe batch # on fwd end

220 - 1- Instal spacers as per dwg D3391 A/R Magnabond 6398 Batch: M137712 exp. date: 2019-01 cure time 12hrs as per QSI0015 2- Grind crossbolts flush 3- Back drill using #9 drill 4- Touchup Magnabond 5- Deburr

235 - AND REALODINE AS PER PAR09-043

240 - PRIME AS PER DWG AND QSI005 4.2.1.3.3

260 - 1-Install inserts as per Dwg D3391 2-Install Aft Cap as per Dwg D3391 A/ R Sikaflex-241/-291 18/04/20
Sikaflex expiry date: M1386-1 3- INSTALL WEARPLATES AS PER DWG

290 - 5- Detail DD, open (5) forward wearplate holes 0.375", then use DT10247 and drill holes for nutplates and c'sink. 6-Open wearplate holes to 0.297" and c'bore as per dwg D3391. ***SIX FARTHEST AFT HOLES ONLY*** 7-Open up all float bag holes to 0.328" and c'sink as per Dwg D3391. 8-Deburr 9- Scribe batch # on fwd end

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D6014-090 <u>B139426</u>	1	36	0	0
220-Skidtubes	D3670-4-200 <u>SO21464</u>	④	78	0	0
260-HandFinish	ALS4-1032-130 <u>SO07279</u>	8	12,098	0	0
	D4095-047 <u>SO25094</u>	1	2	0	0
	D4095-049 <u>SO18296</u>	1	28	0	0
	MS20601-AD4W3 <u>4437</u>	⑩ <u>SO16824</u>	47	0	0
	MS20601-AD4W7 <u>M137148</u>	⑧	305	0	0
270-QC	MS21075L5 <u>FM138042</u>	<u>*5</u>	672	0	0
	ALS4-1032-225	4	1,836	0	0
	AN3C4A <u>SO19394</u>	6	1,093	0	0
	AN3C5A <u>SO19394</u>	4	280	0	0
	D2646 <u>F164005</u>	1	152	0	0
	D3672-1 <u>F150074</u>	2	1,741	0	0
	NAS1149C0332R <u>SO275700</u>		3,419	0	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

DART AEROSPACE LTD		Work Order:	168762-A
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391 Rev: J		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

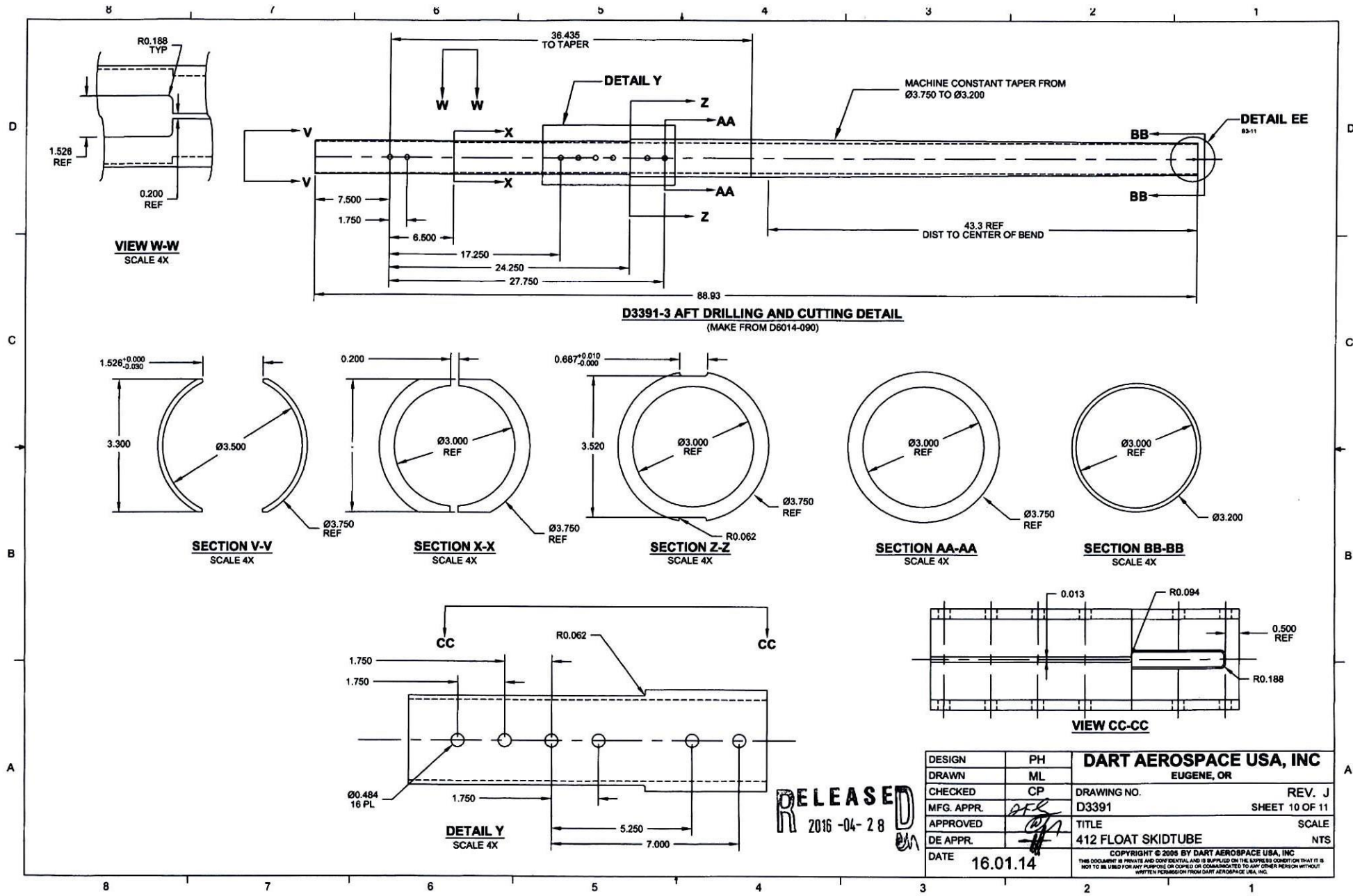
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.0	✓		TAPE	
3.500	+/-0.010	3.502	✓		VERNOS	
Ø3.200	+/-0.010	3.195	✓			
Ø3.750	+/-0.010	3.75	✓		↓	
30° x 0.060 chamfer	+/-0.010	30° x 0.070	✓		↓	
88.93	+/-0.030	88.93	✓		TAPE	

Measured by: PMP	Date: 2017-11-27
Audited by:	Date:

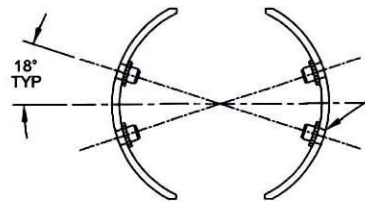
HAAS Section						
1.526	+0.000/-0.030	1.510	✓		Kt-05	vern
7.500	+/-0.010	7.500	✓		" "	" "
27.750	+/-0.010	27.750	✓		Tape	
31.750	+/-0.010	31.750	✓		" "	
35.250	+/-0.010	35.250	✓		" "	
3.300	+/-0.010	3.300	✓		Kt-05	vern
0.200	+/-0.010	0.200	✓		" "	" "
3.520	+/-0.010	3.520	✓		GA-10	micrometre
0.687	+0.010/-0.000	0.68	✓		Kt-05	vern
R0.062	+/-0.010	0.0625	✓		R-G	
Ø0.484	+0.005/-0.001	0.484	✓		Kt-05	vern

Measured by: 1kt-989	Date: 17-12-02
Audited by: 14	Date: 17/12/04

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	
H	11.06.21	Dimension 44.995 removed	KJ	
I	12.05.15	Dwg Rev updated	KJ	
J	12.05.23	Dimension updated	KJ	
K	12.10.15	88.93 dimension removed	KJ	
L	12.11.28	88.93 dimension added	KJ	
M	16.06.23	Dimensions updated per Rev J	KJ	



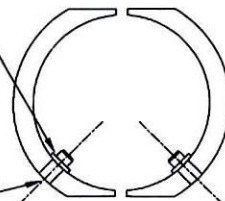
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	ML	EUGENE, OR	
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.	<i>DFR</i>	D3391	SHEET 10 OF 11
APPROVED	<i>CP</i>	TITLE	SCALE
DE APPR.	<i>CP</i>	412 FLOAT SKIDTUBE	NTS
DATE	16.01.14	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



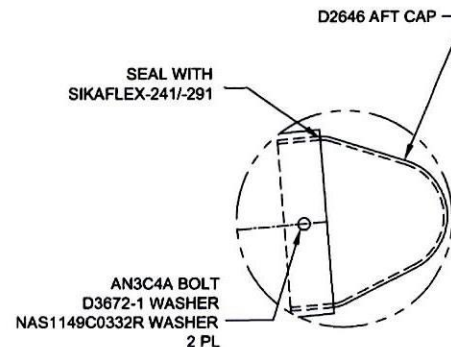
SECTION S-S
SCALE 5X

DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL

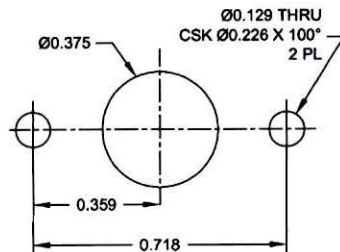
MS21075L5 NUTPLATE
REF
USE DT8217 DRILL TEMPLATE
TO LOCATE HOLES AND OPEN
TO Ø0.375



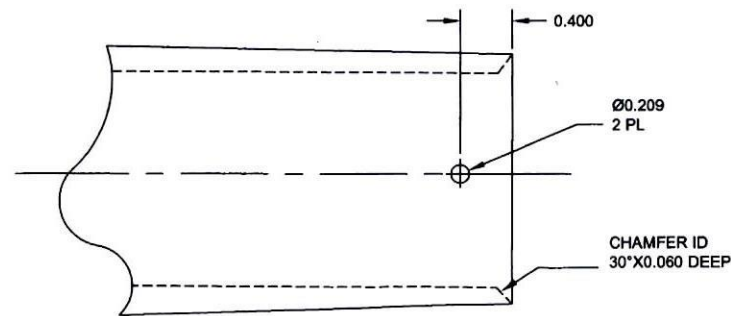
SECTION T-T
SCALE 5X
5 PL



DETAIL U
SCALE 5X



DRILLING DETAIL DD
SCALE 10X
87-8.9



DETAIL EE
SCALE 2X
D1-11

NOTES:
1) USE INDUSTRY STANDARD NUT PLATE DRILL JIG IF REQUIRED.

RELEASED
2016-04-28

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	ML	EUGENE, OR	
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.	YR	D3391	SHEET 11 OF 11
APPROVED	CH	TITLE	SCALE
DE APPR.	CH	AFT TUBE ASSEMBLY	NTS
DATE	16.01.14	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCIALIZED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: ALS4-1032-130 Revision: Rivnut														
100	Receive Ea	S029994	168762-A	6 Ea	0	S007279	HandFinish4		Stock	1/8/2018	Issue Container			
		S030030	168762-A	2 Ea	0	S007279	HandFinish4		Stock	1/8/2018	Issue Container			
Operation Totals:		2		8	0									
Part Totals:		2		8	0									
Part Number: ALS4-1032-225 Revision: Rivnut														
100	Receive Ea	S029976	168762-A	4 Ea	0	M135998	FP001		Stock	1/8/2018	Issue Container			
Operation Totals:		1		4	0									
Part Totals:		1		4	0									
Part Number: AN3C4A Revision: Bolt														
100	Receive Ea	S029986	168762-A	6 Ea	0	S019394	FP001		Stock	1/8/2018	Issue Container			
		S030041	168762-A	6 Ea	0	S019394	FP001		Stock	1/8/2018	Issue Container			
Operation Totals:		2		12	0									
Part Totals:		2		12	0									
Part Number: AN3C5A Revision: Bolt														
100	Receive Ea	S029987	168762-A	4 Ea	0	S019396	FP001		Stock	1/8/2018	Issue Container			
Operation Totals:		1		4	0									
Part Totals:		1		4	0									
Part Number: D2646 Revision: Aft Cap														
210	QC21-SA	S030043	168762-A	1 Ea	0	164005	FP001		Stock	1/8/2018	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: D3391-025 Revision: Aft Tube Assembly														
290	QC21-SA	S014104	168762-A	1 Ea	0	S014104	FG039	Bin	Stock	11/27/2017	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: D3672-1 Revision: Washer, Phenolic														
140	QC21-SA	S030044	168762-A	2 Ea	0	150074	FP001		Stock	1/8/2018	Issue Container			
Operation Totals:		1		2	0									
Part Totals:		1		2	0									
Part Number: D4095-047 Revision: Wearpad Aft														
210	QC21-SA	S029972	168762-A	1 Ea	0	S025094	FG001		WIP	1/8/2018	Issue Container			
		S029973	168762-A	1 Ea	0	S025094	HandFinish4		Stock	1/8/2018	Issue Container			
Operation Totals:		2		2	0									
Part Totals:		2		2	0									
Part Number: D4095-049 Revision: Wearpad Aft														
210	QC21-SA	S029975	168762-A	1 Ea	0	S018296	FP001	Bin	Stock	1/8/2018	Issue Container			
		S029993	168762-A	1 Ea	0	S018296	FP001	Bin	Stock	1/8/2018	Issue Container			
Operation Totals:		2		2	0									
Part Totals:		2		2	0									
Part Number: NAS1149C0332R Revision: Washer														
100	Receive Ea	S029983	168762-A	10 Ea	0	S027570	FP001		Stock	1/8/2018	Issue Container			

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Operation Totals:		1		10	0									
Part Totals:		1		10	0									
Totals:		14		46	0									

Plex 1/8/2018 2:39 PM Dart.Boucher.Sylvie

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					